Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 (Original). A naturally occurring low molecular weight adenosine A3 receptor agonist (LMW-A3RAg).

2 (Original). The LMW-A3RAg of Claim 1, obtainable from a vertebrate tissue or a vertebrate-derived cell by extraction in a liquid medium.

3 (Original). The LMW-A3RAg of Claim 2, obtainable from muscle tissue.

4 (Original). The LMW-A3RAg of Claim 1, obtainable from medium conditioned by vertebrate source cells.

5 (Original). The LMW-A3RAg of Claim 4, wherein said source cells are muscle cells.

6 (Original). The LMW-A3RAg of Claim 4, wherein said source cells are white blood cells.

7 (Original). The LMW-A3RAg of Claim 1, which is resistant to degradation by adenosine deaminase.
The LMW-A3RAg of Claim 1, having the following characteristics:

(i) it is obtainable from animal-derived tissue or cells;

(ii) it filters through a filter with a maximal molecular weight cut-off of about 3,000 Daltons;

(iii) it is water soluble, heat stable, non-proteinaceous and resistant to adenosine deaminase activity.

9 (Original). A synthetic molecule having the same chemical structure as the agonist of Claim 1.

10 (Original). A pharmaceutical composition comprising as an active ingredient, a therapeutically effective amount of at least one naturally occurring LMW-A3RAg and a pharmaceutically acceptable excipient.

11 (Original). A pharmaceutical composition comprising, as an active ingredient, a therapeutically effective amount of the molecule of Claim 9.

12 (Original). The pharmaceutical composition of Claim 10 or 11, formulated in any form suitable for oral administration.

13 (Currently Amended). A method for a therapeutic treatment comprising administering to a subject in need an effective amount of a naturally occurring LMW-A3RAg for achieving a therapeutic effect,

the therapeutic effect comprises inhibition of adenylate cyclase in target cells.

14 (Original). The method of Claim 13, wherein said LMW-A3RAg is administered in combination with an additional therapeutic treatment.

15 (Original). The method of Claim 13 or 14, wherein said LMW-A3RAg is administered orally to the subject in need.

16 (Original). A method for a therapeutic treatment comprising administering to a subject in need an effective amount of a molecule according to Claim 9.